CHICAGO NEUROLOGICAL SOCIETY.

February 16, 1905.

The President, Dr. Harold N. Moyer, in the Chair.

A Case of Idiopathic Muscular Atrophy with Bilateral Ptosis and Complete Ophthalmoplegia Externa.—Dr. Geo. W. Hall presented this case, stating that the patient, a boy, was 11 years old. According to his mother, he had been perfectly healthy until four years ago, when he had scarlet fever followed by gradual increasing difficulty in walking. The condition of the eyes had never been noticed by her. The family history was negative. The case approached the Landouzy-Dejerine type of the disease, but the boy can close his eyes and mouth very well. The reaction of the eyes to light and accommodation was normal. There were no fibrillary twitchings, and the muscles responded to faradism. Patellar and radial reflexes were present, but decreased. There was an absence of sensory and sphincter disturbances. Typical method of rising from the floor was demonstrated. The chief point of interest in the case was the presence of the bilateral ophthalmoplegia externa, which was probably congenital, due to nuclear involvement.

Dr. L. F. Barker said the case was interesting to him as to the exact relation of the ophthalmoplegia to the muscular atrophy. If it is primary in the eye muscles it is the only case on record. Ophthalmoplegia is not a part of general myopathy. The fact that it is so complete in this case seemed to make it very probable that it is binuclear in origin. One or two cases of myopathy have been examined by taking out a bit of the muscle and are said to have shown a typical change, though but one muscle was paralyzed. Here we have complete bilateral paralysis. It would hardly be supposed that some of the face muscles would not be involved. Dr. Barker leaned to the view expressed that this case was a combination of nuclear disease with the myopathy. The ocular signs may be congenital, or may have followed the scarlet fever. He did not think this could possibly be anterior horn disease, from the general distribution of the atrophy.

Dr. Harold N. Moyer said it seemed to him the distinctions made in these clinical types were somewhat involved. In some of these cases some muscles show hypertrophy, while others show the opposite, and it never had seemed to him a well-founded distinction. In this case, as in most others, can be seen two types mixed. Dr. Hall added that the boy had had unresolved pneumonia for some time, and there was still evidence of the old inflammation on the right side. In these cases it is not uncommon to find chest inflammation, owing to poor muscular action.

A Case of Intermittent Claudication.—This was presented by Dr. James B. Herrick. The patient had first been seen by Dr. Jacques, to whom credit should be given for the diagnosis. The patient is a Hebrew, 38 years old, a peddler, with no history of excessive alcoholism, no history of syphilis or over-indulgence in tobacco. He first noticed something wrong with the foot about a year ago, when he had some pain in the sole of the foot in walking, and the calf of the leg would pain and become stiff and cramped and the right foot would become almost as though dead, and white. Four months later a somewhat similar feeling was experienced in the left foot. There was the same painful sensation on elevating the foot, and the same loss of color. If he allows the foot to hang down it becomes more or less red, much as in erythromelalgia. Some time ago, what was supposed to be little abrasions appeared on the outer and inner surface of the right foot. These increased in size and there was more or less burning in and around these ulcers. Later the nail of the little toe became affected and loose, and a small ulcer appeared on the inner aspect of the little toe. A few weeks ago, in the night he was taken with a good sharp pain in the pericardiac region, running out into the arm, which resembled in some respects angina pectoris.

The physical examination, with the exception of that of the feet, is practically negative, but the radial pulse is small and of low tension. The registration is, in the right pulse, 120 m.m. of mercury, and in the left 90, instead of the average 140. No arteries can be felt in the foot. The dorsal posterior tibial arteries cannot be palpated, and nothing approaching sclerosis can be made out in the radials. Even in bed and when quiet the patient had more or less pain in the foot. The same phenomena of paleness and pain in the foot can be produced by pressure on the femoral as he lies in bed. In walking, one of the chief complaints is the pain in the calf of the leg. The case seems to be one of intermittent claudication.

The cases that have been described have most of them shown arteriosclerosis, both in amputated limbs and in autopsy. In this case no arteriosclerosis can be observed, but in some of the cases of Charcot and Erb there was complete absence of pulse in the foot, and this patient shows, as do many cases, either gangrene of the toe or some trophic disturbance. The relation between this and erythromelalgia would seem to be close. Erb, in the conclusion of his longest article about five or six years ago, called attention to the fact that he would regard intermittent claudication as angio-sclerosis, and that Raynaud thinks it is angio-sclerosis, that erythromelalgia was a neurosis, and that instead of a spastic condition there was rather the opposite, so that when the foot was down the dilators of the vessels, or the constrictors, were paralyzed and increase in color, and even in the temperature of the parts could be made out. Oppenheim, it was believed by the essayist, called attention to the fact that there was probably a marked spastic condition in these cases, and even Erb, who is inclined to call the disease a dysbasia angio-sclerosis, thought the same. One must assume a spastic condition to account for the bloodless condition and for the pain and gangrene sometimes met. An X-ray picture was taken of this foot in order to discover some sclerotic condition of the vessels, but it was entirely negative.

Asked by Dr. Billings as to the effect of the dilators, Dr. Herrick said that nitro-glycerine gave the patient relief from pain. Perhaps he had not been justified in not having given strophanthin, as he had wished the case to be seen as it was. Digitalis would be indicated, but it has a tendency to contract the vessels. If the heart beat could be materially strengthened, it would seem that some material good might be derived. Erb, in his case, had much benefit from strophanthin, as well as from the use of warm foot baths, electricity and iodides.

Dr. Mettler asked the effect of extreme cold and heat. The patient said he was worse in cold weather. Dr. Mettler said he had seen the statement in some place that the difference in one of the symptoms in erythromelalgia and Raynaud's disease was the difference in the sensations produced by extreme cold and heat. In the former cold gave relief, while the reverse was the fact in Raynaud's disease.

Dr. Herrick said he mentioned the race because Oppenheim is inclined to think the neurotic element plays quite a part, and the Hebrew race is notoriously neurotic, and he thinks that is why such a large per cent. of those who have this disease are Hebrews. Erb lays great stress upon tobacco. Another point, the patient has a right inguinal hernia, and in one case the wearing of a truss was regarded as having something to do with the obstruction of the circulation. The rectum is entirely negative, which ought not to be overlooked, as there might be a possibility of pelvic conditions causing obstruction to the vessels.

Dr. Chas. L. Mix said the case reminded him of one of his own, a man

;2 years of age, who had a chronic interstitial nephritis and a certain amount of arteriosclerosis. It began as this, with pain in the great toe, followed by whiteness of the toe and ulcers at the side of the nail. He did not lose the nail, but came about as near it as this patient. In his case the foot was better when elevated. The pain was worse at night than in the daytime. The patient liked warmth and the room was kept hot, and clothes heated on an oil stove were applied constantly to give relief. The pain was intense. At one time the necessity of amputation of possibly the whole leg, on account of the gangrene which seemed to be appearing, was considered. He was given nitroglycerine, spartein and atropine. He was on iodide of soda, also, continuously, and in the course of five months made a recovery. He has remained well, and had no return of his intermittent claudication.

Dr. Williams asked if there was evidence as to whether dilatation of the heart was myasthenic. The attack of pain which was suggested as having been angina might have been due to either factor and the feebleness of the pulse everywhere is not like the condition met in cardiac myasthenia; and yet there is no condition in the vessels, as far as can be seen, to make one think of cardiac degeneration. The pathology in this puzzling case may be elucidated to a single degree by the treatment. Attention was called to a paper by Thompson, of New York, on the effect of different drugs on relaxation of arteries, in which most remarkable results were secured by small doses of aconite where the nitrites failed.

Dr. Herrick said his plan was to give strophanthine to improve the cardiac tone. Erb calls attention to the local trauma occasionally present in these cases. One was the case of a well-to-do man who, about sixty days in the year, went fishing in the mountains and waded for hours in the cold mountain streams fishing for trout. He thought that determined the excessive degree of sclerosis in the foot. Dr. Bevan had called the attention of the essayist to the fact that Dr. Gunn, in his lectures, when he would meet with a case of Pott's toe would refer to the fact that "this man complains of tire in his legs, which is the tire of approaching gangrene."

Dr. Mix thought the fact that the pain is worse at night had some bearing on the etiology, as pointing to an increase in pain at the time of a decrease in the amount of arterial pressure, and the same had occurred in his case, *i. e.*, the maximum of pain at the minimum arterial pressure.

A Case of Ophthalmoplegia with Implication of the Motor Branch of the Fifth Nerve.—This was also shown by Dr. Herrick. The patient, a woman 32 years old, came to the Presbyterian Hospital three weeks previously. There is a negative family history, and her personal history rather uneventful, with the exception of the removal of a mass of supposed tubercular glands from the left side of the neck ten years ago. She also had several attacks of tonsilitis. The 10th of November of last year she worked in a cold room bending over a packing trunk, and took cold. She felt well on retiring, but on awakening noticed that she could not open her left eye, had quite a severe pain in the left side of the face, the jaws were stiff, and she could hardly open her mouth. The severe pain in the left side of her face lasted some time, as did the stiffness of the jaws, but with the relaxation of the jaws the pain disappeared, although she did not regain the ability to open the eye. She had no difficulty in swallowing, in talking, no trouble in seeing out of the right eye; taste, so far as she could tell, was perfectly normal.

She has a marked ptosis on the left side. She can wrinkle the forehead, and the movement of the facial muscles is perfect. The left eye is in a completely immobilized position, with the slight exception that when asked to look down there seems to be slight motion, with a slight rotation, a feeble motion of the superior oblique; this has occurred since her stay in the hospital. On the first examination there seemed to be absolute loss of all motion in all the eye muscles. There is complete absence of the reflex or contraction of the iris for accommodation and for light. There seems to be a very slight consensual reflex. The ciliary accommodation is entirely gone. With the right eye she can read fairly well, sees at a distance, but as things come nearer they appear less distinct. Examination of the retina shows slight pallor of the right disc, and more marked pallor of the left, and Drs. Hotz, Brown-Pusey and E. V. L. Brown agree that there is some pallor of the disc. The color field was narrow for green. The paralysis of the third, fourth and sixth seems to be complete, with the exception of a slight power of control over the superior oblique. It will be remembered that at the beginning of the attack there was quite severe pain in the left side of her face, seeming to be some irritation of the sensory fifth; also, difficulty in opening the jaw and irritation of the motor fifth. Now there is loss of power of the motor fifth. Sensation is perfect. When asked to close the jaw the masseter on the right side bellies up fully, but not on the left side. The same is true of the temporals. On opening the mouth wide there is little deviation to the left, the whole jaw being drawn a little more to that side. There is a little sagging of the floor of the mouth. There is a trace of albumin in the urine. Since the onset of this trouble she has had one or two attacks of tonsilitis, but none preceding this attack. There was no fever at the time of her taking cold. However, the next day after the onset she vomited, also for a couple of days thereafter.

The lesion would appear to be in the lower neurone, either as a multiple neuritis or some pressure at the base of the brain, as from nuclear disease of the pons, the latter being most probable. If it is agreed that she has optic atrophy the question can properly arise as to whether she has the beginning of some disease like multiple sclerosis, and that this is but an incident of multiple sclerosis. The knee-jerks are present and her station is good.

In the discussion of this case Dr. L. F. Barker said that, while interested in the case, which he had been permitted to examine,, he was not ready to make a full and positive diagnosis, but he had ideas which he was willing to express merely tentatively. Five or six possibilities may be thought of: first, some infection or intoxication may have caused a nuclear disease or a neuritis; the acute onset, the albuminuria, the recurring tonsilitis, and the fact that the patient has a little fever every day, though the temperature has never been higher than 99.8, suggest this. The leucocytosis amounted to only 11,000. Cases of ptosis and ophthalmoplegia something like this have occurred after common colds, rheumatism, influenza, diphtheria and tubercular meningitis. As the essayist has said, multiple sclerosis has also to be thought of, but another thing which should be borne in mind is the possibility of beginning brain tumor. In connection with the possibility of cold and rheumatism there is a case reported by Raymond (1890) of a woman, aged 25, who caught cold and had paralysis of the left lower facial, then of the 12th, of the motor 5th and 6th, and of two branches of the 3d nerve. The discs were normal. Recovery occurred in three months.

Another case is that of Michel (1872), a soldier, 23 years of age, who was attacked with pain in temples and dizziness; temperature 39.5. On the fourth day there were complete right oculomotor paralysis and hyperemia of the right disc. On the seventh day pain was felt in the knee. The eye paralysis disappeared in eleven days; the rheumatism continued for five weeks; the patient ultimately got quite well.

Of the cases of diphtheritic paralysis, one is reported by Futterer in 1896 not dissimilar in symptoms to the case under discussion; there was complete oculomotor paralysis, followed by complete recovery. There is no evidence that the patient Dr. Herrick shows has recently had diphtheria; and moreover, it is very unusual to have in diphtheritic paralysis any involvement of the sphincter of the iris. Besides, there has been no palatal paralysis in this case.

Of the influenza cases accompanied by ophthalmoplegia, one case is reported by Gutman (1890) with right ptosis and right internal and external ophthalmoplegia, and aortic insufficiency, and one still more like the case before us by Schirmer (1890), in which there was right ptosis, prominent eyeball, total right-sided ophthalmoplegia; the right pupil was rigid to light and accommodation; the eye ground was normal; vomiting, headache and diminished sensibility were present. In right half of the face were other symptoms; the tongue deviated to the right as in this case, and the masticatory muscles were weak on the right side. This case of Schirmer's is almost identical in symptomatology with the case Dr. Herrick has just presented, except that in the present case the optic discs are pale.

Of the cases of tubercular meningitis which have presented similar symptoms, one reported by Seitz (1874) had complete right oculomotor paralysis coming on suddenly, as the first sign of the disease. The autopsy eight days later showed the right pedunculus cerebri to be externally red and softened, and the right oculomotor nerve friable. Kahler (1887) had a case of complete oculomotor paralysis in a woman of 36; the eyegrounds were normal; the temperature was 38 degrees; slight stiff neck was present; later, paralysis of the 7th nerve occurred. Tubercular meningitis was found at the autopsy.

Among the recorded cases of multiple sclerosis Dr. Barker could not find a case like the one presented. There are cases of eye muscle paralysis reported, it is true, but not one at all similar to this symptom-complex which Dr. Herrick's patient presents.

Certain cases of tumor cerebri in the literature resemble closely in symptomatology this case. For instance, Sir Charles Bell had a patient with left ptosis, rigid bulb, dilated right pupil, anesthesia and neuralgia of the left side of the face, neuroparalytic keratitis, paralysis of the masticatory muscles on the left side, left eyesight poor, and temporary paralysis of the 7th nerve. The autopsy revealed a tumor in the cavernous sinus lateral to the foramen for the meningeal artery, extending forward as far as the superior orbital fissure. In this case the 3d, 4th, 5th and 6th nerves were included in the tumor, and were atrophic. The second nerve went over the tumor and was gray. It would be easy for the chiasm to be affected there. A lesion in the same situation could account for the symptoms in Dr. Herrick's case very well.

Türck (1885) had a patient, 34 years of age, who four months before death suffered violent pain in the right supraorbital region, followed the next day by right ptosis and almost complete paralysis of the right oculomotor nerve. The autopsy showed a tuberculous dura compressing the ophthalmic nerve and the right half of the chiasm, and there was infiltration of the right oculomotor.

Rosenthal (1886) had a case of left ptosis, double choked disc, partially left ophthalmoplegia, anesthesia of the trigeminus due to a tumor the size of a bean, involving the left Gasserian ganglion, oculomotor nerve and cavernous sinus.

Mingazzini reports the case of a man of 30: Left nosebleed, left tinnitus; left headache; left ptosis, and later, complete left internal and external ophthalmoplegia; left pupil wider; vision of left eye impaired; paresis of the muscles of mastication on the left side of the face, with hyperesthesia of the left side of the face and pallor of the left optic disc. Sarcoma from the antrum of Highmore, including the turbinated and the left sphenoid bone, infiltrating the sella turcica, and extending toward the clivus.

The evidence from the literature, then, is in favor of a lesion in this case of Dr. Herrick's, in the region of the cavernous sinus, probably under the optic nerve, involving the motor part of the 5th, 3d, 4th and 6th nerves there. Whether a localized meningitis (tubercular or other) or a neoplasm Dr. Barker would not attempt to say, but he thought it most likely one of these two.

In reply to a question from Dr. Williams as to whether in any of these cases there was such an acute onset, Dr. Barker said that in one the paralysis was sudden and complete at the beginning. In some of these cases the tumor developed for some time before any of the acute symptoms particularly referable to the nerves appeared, and then the nerve symptoms came suddenly. Tubercular disease is likely to produce a sudden change from the fact that it causes thrombosis of the small veins, which often results in a hemorrhage and causes the actual paralysis.

Dr. Herrick called attention to the connection of the removal of the glands from the neck in this case, which he had tried to reconcile with the acute onset and the utter absence of symptoms preceding it. There was no history of lues.

Dr. Mix asked if there would not necessarily be signs of involvement of the ophthalmic division or the superior maxillary division of the 5th, if the lesion were where Dr. Barker thinks it is. They lie in the cavernous sinus, and tumor at that point would involve the 6th nerve, the 3d, 4th and the two upper divisions of the 5th, as well as the inferior maxillary as it goes through the foramen ovale.

Dr. Barker said that the cases in the literature showed that these could escape.

Dr. Herrick said that the patient was on specific treatment now.

Dr. Billings said he had a case like this in the hospital, in which there was a left ptosis with ophthalmoplegia and fixation of the iris; the ciliary muscles seemed to be normal. She had a marked supraorbital neuralgia and great tenderness over her left temporal region, but no other involvement of the 5th. The symptoms entirely disappeared under iodides.

Dr. Moyer had seen a case almost identical with this at Bellevue, which was found to be osteosarcoma. The probabilities, he thought, were that this case was the same, because if due to specific infection it would present other features by this time. It was either tubercular or a new growth.

A Cured Case of Myasthenia Gravis was presented by Dr. Harold N. Moyer. The case had been shown to the society in October in 1902, when all had agreed that it was a true case of myasthenia gravis. Dr. Moyer had first seen the case in August of that year, when it had been sent to him by Dr. Pusey, whom the patient had consulted on account of trouble with his eyes. He could not focus the two eyes, and had drooping lids. Subsequently this weakness extended to his arms and his legs, so that he was shortly spastic all over. He was worse from the 15th of December, 1902, until the 10th of February, 1903. He could not completely dress himself during that time and was almost helpless. He could not eat solid food, as he could neither masticate nor swallow it. He could walk about the room, but could not get on his feet without assistance. His improvement, when it began, was slow, but steady. He seems now as well as ever, but has slight weakness in the fingers in the way of grasp, the dynamometer showing 15 with one hand and 30 with the other. The legs are strong and the vision is normal. The eyes did not move from the middle of August, 1902, until the middle of February, 1903. The amelioration of the symptoms began two years ago, and he has considered himself well for a year and a half. He walks from a mile to three miles every day, and could easily walk five miles a day. He can now use the typewriter, which he had been obliged to give up. He has no sensory symptoms. When the patient was presented he had the usual symptoms of coated tongue and general failure of elimination, but never any rise of temperature. He had every symptom of typhoid fever without the fever. These have all passed away. At one time during his illness he had trouble with his breathing, which he attributed to some treatment he was using. He could not get out of his chair and had to call for help. Dr. Moyer had made a diagnosis of myasthenia gravis from the symptoms when the patient was sent to him by Dr. Pusey. He had shown patellar reflexes, but these would soon exhaust, one or two strokes being all that could be elicited. He first noticed improvement in February, exercised about the house until April, when, with the assistance of a friend, he tried to get a few blocks to a barber shop, but had to stop and lean on the fence for support after going a short distance. In July he had gotten so he could go around without assistance. The treatment given by Dr. Moyer had been nitrate of strychnine.

Dr. Billings asked if it were surely myasthenia gravis, and if there were records of cases cured in so short a time.

Dr. Moyer replied that no one who had seen the case had a doubt of the diagnosis. While cases had been reported cured, none had been reported cured for so long a time. His condition was so serious during the winter that it was not expected he would live through the summer. A pretty fair reaction could be elicited for one, or may be, two jerks, and then would disappear. Asked as to the nasal smile, it was said this did not exist, but the features were mask-like, a fixed, expressionless look, and the eyes did not turn. He would look about by moving his head.

A Case of Pachymeningitis Cervicalis Hypertrophica, Simulating Syringomyelia.—This case was presented by Dr. Julius Grinker. J. W. B., aged 26, male, colored, single, electrician, came under his observation Jan. 28, 1905. His father died by accident at the age of 47; his mother died of an unknown cause at the age of 22. He was the only child. The grandparents lived to old age. No tuberculosis, carcinoma or nervous disease are found in the family record. His habits were always good. He never drank nor smoked to excess. Of venereal diseases he had a mild case of gonorrhea, but never syphilis.

The patient was well up to the age of 21, at which time he developed dysentery while serving as a volunteer in the Spanish-American war. One year later he was sick with typhoid fever and cerebrospinal meningitis. He states that during the acute stage of his illness he suffered from fever and stiffness of the neck muscles. For a period of thirty days he had pains in his back, left leg and left arm. The pains were sharp and shooting, like neuralgia. When, at the end of a month, they had entirely disappeared a period of ill-health occurred, and lasted about three months. During this time he was weak and unable to work. Within four months after the beginning of the disease he could resume his usual occupation, and boasts of having been able to carry a sewing machine up a flight of stairs. Even at this time he complained of one symptom that annoyed him since the termination of the acute stage, namely, that the sudden turning of the head would regularly cause him to become dizzy. This symptom lasted until two years ago.

About four and a half years ago, that is, about one year after his attack of typhoid fever and meningitis, he experienced a peculiar feeling in the left hand and left leg, which he described as a "tight, sleepy feeling," which was accompanied by muscular weakness, which gradually grew worse. On the left lower extremity this paresthesia involved the foot and the leg to half-way between the ankle and the knee. Five months later the right hand became similarly affected. He never experienced any abnormal sensations in the right lower extremity. One year after the onset of the paresthesia the right hand improved, but numbness continued in the left side. There was in addition a dragging sensation and weakness of the back and left leg, which was always worse when the patient walked up a flight of stairs. In September, 1901, while the patient was marching with his regiment he was unable to obey his officer's command for a "quickstep;" his feet seemed to stick to the ground.

In 1902 the muscular weakness in both hands became more pronounced. For the past two years he has been unable to raise his hands over his head, and he noticed that his shoulder girdle had become very weak.

Two years ago the patient scalded his left hand with hot water, which he did not feel, but which blistered his skin considerably. The vesicles disappeared after a time, but new crops of vesicular eruptions continued to come, which were rather slow in healing.

Bladder disturbances began very early in the disease and have continued ever since. He cannot hold his urine very well, and if he fails to empty his bladder frequently there is an overflow of its contents. Constipation and sexual indifference amounting to impotence began at the same time, although up to one and a half years ago he still had the desire, but no power. Now even his sexual libido is in abeyance.

The weakness in his hands and left leg and foot, which has been diagnosed by various physicians as hemiplegia, lead paralysis, multiple neuritis and hysteria, has of late entirely disabled him from following his occupation. Of his sensory disorder he is entirely ignorant, and it is chiefly on account of his trophic disturbance that he seeks our advice.

Status Præsens: The patient is a well-nourished boy of about 5 feet 6 inches in height and about 145 pounds in weight. His gait is somewhat spastic, but his left side is worse, resembling very much the condition of left hemiplegia. The left hand is the seat of trophic disturbance. Upon the dorsum are seen two large blebs and a generalized puffiness with edema. The third and little fingers present deep ulcerations on their dorsal surfaces, which are fully two inches long. Evidence of former vesicular or pustular eruptions are seen over various portions of the body. The face is symmetrical, the palpebral fissures are of equal size, the pupils are equal and react well to light and accommodation. There is no abnormality of the eye muscles, no nystagmus, no optic atrophy nor optic neuritis. The tongue does not deviate. The right hand shows a considerable flattening of the palm and some wasting of the extensors on the dorsum. Flexion and extension, adduction and abduction of the fingers are still possible, but below normal; in the wrist, flexion and extension are very weak. The left hand is almost paretic, but atrophies cannot be seen on account of its puffy condition. Flexion and, particularly extension of the wrist, are greatly impaired. In the left foot dorsal flexion is almost impossible; the muscles are atrophic. Although the patient considers his right foot perfectly normal, a similar weakness and atrophy of muscles is observed, which is less marked on the left side. The lower extremities appear spastic upon passive motion.

The left thenar and hypothenar eminences are rather soft and flabby. The lumbrical and intercostal muscles are extremely weak. The left triceps has almost entirely disappeared. The right triceps is present, but weak. In the right hand pronation and supination are possible, but below normal. Supination is impossible in the left hand. Wrist extension on the right side is slightly reduced; on the left side, impossible. The pectoral muscles appear atrophied in their upper portions; adduction of the extended arms can be easily prevented. The deltoids, anterior and middle portions are well developed, but the posterior portion is defective bilaterally. The upper portion of the trapezius muscle is bilaterally well developed; part of the middle and the entire lower portions are defective. The serratus magnus has completely disappeared on both sides. The paralysis becomes very marked upon an attempt to abduct the arms or raise the arms above the horizontal position, which latter is entirely impossible. When the patient attempts to extend the arms forward the scapulæ project winglike from the thorax, so that the observer can place his hands between the scapula and thorax. When the arms are extended outward the inner borders of the scapulæ touch.

An electrical examination of the weak muscles yields response to both currents, but the quantity of current required for some of the muscles is enormous. Besides the quantitative changes, it is impossible to detect either the partial or complete reaction of degeneration in any of the muscles, and it goes without saying that there is no response over muscles that have entirely disappeared. The palpable nerves are not enlarged.

Reflexes: The superficial reflexes are present and of normal intensity, with the exception of the scapulo-humeral bilaterally, and the left plantar reflex, which cannot be elicited. Of the deep reflexes, those for the upper extremities are abolished; the knee-jerks and Achilles jerk are equally exaggerated. Babinski's and Oppenheim's sign are absent. There is no tremor, but a flickering in the affected muscles can be plainly seen. There is no ataxia of station nor of gait.

Sensation: The tactile sense is involved in certain areas. The dorsum of the left hand is entirely anesthetic. Other areas are hyperesthetic; that is, the lightest touch with a wisp of cotton cannot be felt, but a touch with a coarse object, as the finger or test tube, will be perceived. The sense of position is approximately normal. The pain sense is disturbed. The temperature sense was tested by means of test tubes filled with hot and cold water. In a general way the disturbances of the temperature sense both for heat and cold are found in the same areas, although there is greater disturbance for heat than for cold.

Vasomotor disturbances are not apparent; perhaps because the patient is colored.

This corresponds in many phases with syringomyelia. The tactile sense is slightly involved, or not at all. Some will no doubt still claim that this is syringomyelia. That has the trophic disturbance, the motor disturbance, but we know since Charcot described his disease that we can get the picture from compression. That is what is now called meningomyelitis. In pachymeningitis cervicalis hypertrophica it is usually stated there is spasticity of the lower extremities, bladder involvement, rectal disturbance and sexual disturbance, but no atrophy, showing that some portion of the cord lower down must have been involved. Dr. Grinker believed that the case was one of meningomyelitis which began in 1900, went through three typical stages: a painful stage, a stage of ill health, and a last stage of ascending and descending degeneration. His reflexes are all gone in the upper extremities. He has a great deal of spasticity and a degree of ankle clonus, but not well marked. The Achilles jerk is very limited. The sphincter reflexes are present below, but not above. No Babinski and no plantar reflex are seen. The Gordon reflex is obtained, but the essayist is not sure of its reliability. He has the peculiar sensory disturbance, the trophic disturbance, pain and no history of syphilis, no tuberculosis in family, slow onset, three periods, bladder disturbance, sphincter disturbance. Dr. Grinker thought the case was one of pachymeningitis cervicalis hypertrophica simulating syringomyelia, or a case of chronic meningomyelitis. Strobe takes a decided stand against the former. He says it is not always confined to the cervical region; there is not always a hypertrophy. The author thinks many of the cases reported as syringomyelia will, on close examination, be found to be pachymeningitis cervicalis hypertrophica. The eye seems perfectly normal. The sensation of the bladder is one of fulness and the patient knows he has to pass water, consequently there cannot be anesthesia there, but there is incontinence. He never passes water if he can help it. The sphincter symptoms in connection with the others are explained by the compression of the cord below the cervical area. It is known that the fibers come from above. There is secondary degeneration below, therefore we get spasticity and exaggerated reflexes because the pyramidal tract has been involved in a myelitis. In Charcot's disease there is a period of irritation, and after that a period of degeneration, followed by anesthesia.

Dr. Barker asked as to the patient having been in the tropics. Dr. Grinker said he had been in Cuba. In leprosy the anesthesia appears in patches and never is glove shape, as in this case. In leprosy there is no exaggerated reflex. There is not a symptom of anesthetic leprosy. He has no sign of it; and then, the face is always involved.

Dr. Moyer said he saw nothing in the case inconsistent with anesthetic leprosy, as he understood it. The root symptoms, the meningitis, he had.

Dr. Grinker said that this argument was sound, but that most of the books say that in that disease the anesthesia occurs in patches.

Dr. Barker asked how the glove patches were reconciled with root lesions or cord lesions. That has been given as belonging to the segmental, and that we cannot answer.

Dr. Grinker said that in the meaning of the German word this could not be reconciled, but in the meaning of the French word "segmentaire" it was.

Myoclonus Multiplex.—This case was presented by Dr. O. M. Steffensen, who stated that the patient was a male, age 26, married; born in the United States. The family history was completely negative. The patient had had measles at six years of age and had made a good recovery. He had been engaged in prize fighting from his 17th to his 21st year. Five years ago he fell on his back from a scaffold 15 feet high, but apparently sustained no severe injuries, going back to work within a few days. Ten days after the accident he noticed tremors in the arms, legs, eyelids and various skeletal muscles. The tremors or clonic contractions were bilateral, varying in amplitude and frequency, averaging about 90 per minute and appearing intermittently. They may come spontaneously, but usually from voluntary act, such as mastication, yawning, etc. This condition was more pronounced on the left side; the sensation was perfectly normal, the reflexes somewhat increased, especially on the left side. There was no weakness of any muscles involved, neither were there fibrillary tremors or changed electrical reactions. The movements have sometimes thrown the patient from his seat. They were not present during sleep. The patient appeared mentally depressed.